

List of Contents

NUMBER 1

	i	Softstrip data strips containing the table of contents
Peter R. Bono	1	Introduction by the Associate Editor
Eugene Fiume	3	<i>Computers & Graphics</i> Best Paper Award (1986–1988) for "Bit-mapped graphics: A semantics and theory"
		<i>Technical Section</i>
I. Navazo	5	Extended Octtree representation of general solids with plane faces: Model structure and algorithms
Cathy Sobhanpanah	17	Extension of a boundary representation technique for the description of N dimensional polytopes
C. B. Millham and J. L. Zheng	25	A linear pivoting heuristic procedure for computing the curve of intersection of two bicubic surface patches
R. Cossu, M. Ercoli and L. Molledo	39	An extension of CGI functions for generation and manipulation of raster images
Javier Sanchez-Reyes	49	Laser printers for rendering surfaces
		<i>Chaos and Graphics</i>
Clifford A. Pickover	55	The new "Chaos and Graphics" section of <i>Computers & Graphics</i>
Akhlesh Lakhtakia	57	A simple gasket derived from prime numbers
Akhlesh Lakhtakia and Russell Messier	59	Self-similar sequences and chaos from Gauss sums
Clifford A. Pickover	63	Circles which kiss: A note on osculatory packing
		<i>Eurographics '88 Award Papers</i>
Gregor Lux-Mülders	69	Eurographics '88 Conference
Maarten J. G. M. van Emmerik	71	Creation and modification of parametrized solid models by graphical interaction
Xavier Pintado and Eugene Fiume	77	Grafields: Field-directed dynamic splines for interactive motion control
Mel Slater, Allan Davison and Mark Smith	83	Liberation from rectangles: A tiling method for dynamic modification of objects on raster displays
		<i>Short Technical Notes/Technical Forum/Systems</i>
Jürgen Bettels, Peter R. Bono, Eileen McGinnis and Joachim Rix	91	Guidelines for determining when to use GKS and when to use PHIGS

A. Arokiasamy	99	Homogeneous coordinates and the principle of duality in two dimensional clipping
		<i>Software Survey Section</i>
Michael S. Youngblood	101	AT&T's Image Capture Board (ICB) and TIPS software
		<i>Computer Graphics & Education</i>
J. B. Cummings	111	Computers, the cutting edge of learning
Harold J. McWhinnie	115	Development of visual languages with interactive video disks
		<i>Graphics Art</i>
Mieczyslaw Szyszkowicz	119	Images of nonlinearity
Mieczyslaw Szyszkowicz	121	Computer graphics generated by numerical iteration
		<i>News and Views</i>
Kenvin Lyman	127	An elegant merging
		<i>Announcements</i>
Jan van den Bos	129	Pictorial information systems: Call for papers (revised dates)
	130	<i>Computers & Graphics</i> schedule, special issues
	130	Eurographics '89, Hamburg, FRG
	131	<i>Erratum</i>
	I	Software survey section

NUMBER 2

	i	Softstrip data strips containing the table of contents
		<i>3D Voxel-Based Graphics</i>
Arie Kaufman	133	Guest Editor's introduction: 3D voxel-based graphics
Daniel Geist and Michael W. Vannier	135	PC-based 3-D reconstruction of medical images
G. J. Jense and D. P. Huijsmans	145	Interactive voxel-based graphics for 3D reconstruction of biological structures
Reuven Bakalash and Arie Kaufman	151	MediCube: A 3D medical imaging architecture
T. Y. Kong	159	A digital fundamental group
		<i>Technical Section</i>
Avraham Margalit and Gary D. Knott	167	An algorithm for computing the union, intersection or difference of two polygons
Jeffrey Shallit and Jorge Stolfi	185	Two methods for generating fractals

L. Alvisi and G. Casciola	193	On the Two Array Mask hidden-line algorithm
Theoharis Theoharis and Ian Page	207	Polygon rendering on a dual-paradigm parallel processor
L. Piegl	217	A negative experiment with univariate blending functions
H. Ruder, T. Ertl, F. Geyer, H. Herold and U. Kraus	223	Line-of-sight integration: A powerful tool for visualization of three-dimensional scalar fields
Jacques Weber, Pierre-Yves Morgantini, Peter Fluekiger and Michel Roch	229	Molecular graphics modeling of organometallic reactivity
<i>Computer Graphics & Education</i>		
Luiz Ary Messina, Annelore Buhmann, Marion Günther and Georg Köberle	237	Teachware development for education in CAD
<i>News and Views</i>		
Carlo E. Vandoni	243	Development of a large graphics-based application package
<i>Chaos and Graphics</i>		
Sherri Shepard and Andrew Simoson	253	Scouts in hyperspace
T. Richards	261	Graphical representation of pseudorandom sequences
M. Michelitsch and O. E. Rössler	263	A new feature in Hénon's map
Alan Norton	267	Julia sets in the quaternions
<i>Book Reviews</i>		
Jan van den Bos	279	<i>GKS Theory and Practice</i> , edited by P. R. Bono and I. Herman; and <i>Computer Graphics Software Construction</i> , by J. R. Rankin
<i>Announcements</i>		
	281	The role of Hungarians in the scientific and technological progress of the world—II. Scientific Meeting, Budapest, Hungary
	282	HCI International '89, Boston, MA, USA
	283	Eurointegrate '89, Hamburg, FRG
	285	<i>Computers & Graphics</i> schedule, special issues
	285	Eurographics '89, Hamburg, FRG
	I	Software Survey Section

NUMBER 3

	i	Softstrip data strips containing the table of contents
		<i>Computer Graphics in Canada</i>
Günther F. Schrack	287	Guest Editor's introduction Computer graphics in Canada: Past and present
Deborah R. Fowler, James Hanan and Przemyslaw Prusinkiewicz	291	Modelling spiral phyllotaxis
Timothy C. Lethbridge and Colin Ware	297	A simple heuristically-based method for expressive Stimulus-Response animation
Gavin Miller and Andrew Pearce	305	Globular dynamics: A connected particle system for an- imating viscous fluids
B. Sinclair, A. G. Hannam, A. A. Lowe and W. W. Wood	311	Complex contour organization for surface reconstruction
Eugene Fiume	321	Active objects in the construction of graphical user in- terfaces
Michel P. Devine and Derick Wood	329	<i>SEPARATION</i> TM in d dimensions or strip mining in as- teroid fields
I. Gargantini, G. Schrack and H. H. Atkinson	337	Adaptive display of linear octrees
Steve Falk	345	Three-dimensional modelling and Piero della Francesca's use of linear perspective
		<i>Technical Section</i>
Martin Roche	349	Defining a faceted generalized cylinder by projections of cross sections
Itzhak Wilf and Yehuda Manor	355	Tracking parameterized algebraic curves on raster dis- plays
Günter Aumann	361	Approximate development of skew ruled surfaces
C. Guerrini and G. Spalletta	367	An image reconstruction algorithm in tomography: A version for the CRAY X-MP vector computer
Varol Akman and Wm. Randolph Franklin	373	Representing objects as rays, or how to pile up an oc- tree?
		<i>News and Views</i>
Pedro Faria Lopes and Mário Rui Gomes	381	Computer animation in Portugal
		<i>Chaos and Graphics</i>
Ian D. Entwistle	389	Julia set art and fractals in the complex plane

Michael Keith	393	Artistic choice in the display of chaotic dynamics
Harry Seldom	397	Iteration as a creative process in visual art
		<i>Announcements</i>
Jürgen Schönhut	399	Call for papers
Carlo E. Vandoni	400	Call for Eurographics membership
	402	Eurographics membership application forms
	I	Software Survey Section
		NUMBER 4
	j	Softstrip data strips containing the table of contents
José L. Encarnação	407	Editor-in-Chief's introduction
		<i>Technical Section</i>
Peter van Oosterom and Jan van den Bos	409	An Object-Oriented approach to the design of Geographic Information Systems
Andrew Hunter and Philip J. Willis	419	Breadth-first quad encoding for networked picture browsing
Charles X. Durand	433	Bit map transformations in computerized 2D animation
Jack Bryant and Clifford Krumvieda	441	Display of discrete 3D binary objects: I—Shading
Hanan Samet	445	Implementing ray tracing with octrees and neighbor finding
Paul G. Bao and Jon G. Rokne	461	Quadruple-step line generation
Binh Pham	471	Quadratic B-splines for automatic curve and surface fitting
Shin-Ting Wu	477	A new combinatorial model for boundary representations
Marshall Walker	487	Boolean operations with enriched octree structures
F. Major, J. Malenfant and N. F. Stewart	497	Distance between objects represented by octrees defined in different coordinate systems
Uday G. Gujar and I. V. Nagendra	505	Construction of 3D solid objects from orthographic views
		<i>Computer Graphics & Education</i>
A. Buhmann, M. Günther and G. Köberle	523	Computer graphics as a tool in training and education: A COMETT project

		<i>News and Views</i>
J. R. Woodwark	529	Comments on "extended octtrees"
		<i>Chaos and Graphics</i>
Wentian Li	531	Complex patterns generated by next nearest neighbors cellular automata
Stephen T. Welstead and Thomas L. Cromer	539	Coloring periodicities of two-dimensional mappings
S. R. Ramesh	545	Graphics of truncated sinusoids
Ian D. Entwistle	549	Methods of displaying the behaviour of the mapping $z \rightarrow z^2 + \mu$
Mario Markus and Benno Hess	553	Lyapunov exponents of the logistic map with periodic forcing
Peter D. Fortescue and Geoffrey S. Puterbaugh	559	A note on the practical use of the VGA monitor for the display of fractal images
		<i>Short Technical Notes/Tutorials/Systems</i>
P. C. Mathias, L. M. Patnaik and Sudha Ramesh	561	Systolic architectures in curve generation
		<i>Graphics & Art</i>
Samuel D. Huang, Raul Lopez and Jan Siemieniewski	571	The discovery of hidden facial images in the paintings of Vincent Van Gogh and Paul Gauguin by using computer graphics enhancement techniques
		<i>Announcements</i>
	579	Eurographics '90—Call for participation
	582	Eurographics workshop on object oriented graphics—First call for contributions
Chandra S. Desai	583	Announcement and call for papers
	I	Volume 13 list of contents and author index
	XI	Software Survey Section